

IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF OKLAHOMA

FINDINGS OF FACT AND CONCLUSIONS OF LAW

This court has conducted a nonjury trial on the Ninth Claim for Relief in the Third Amended Complaint of plaintiff Skycam, LLC, a Delaware limited liability company¹ (“Skycam”) against defendants Patrick J. Bennett (“Bennett”) and Actioncam, LLC (“Actioncam”). Skycam asserted a claim of ownership of the patent application, US 2009/0207250 A1 (the “Patent Application”) [PX 22] and the claimed inventions if they were determined to be patentable. Additionally, Skycam sought an order allowing it to participate in the prosecution of the patent applications and to exploit any and all future rights granted to the owners of that patent. [Dkt. #267, Petrial Order, at 7].²

¹ Although the Third Amended Complaint was also brought by plaintiff Skycam, LLC, an Oklahoma limited liability company, this court subsequently determined that Skycam, Inc., a Delaware corporation, was the proper party plaintiff. *See* Dkt. #257. As set forth in the Final Pretrial Order, Skycam, Inc., a Delaware corporation, became Skycam, LLC, a Delaware limited liability company. [Dkt. #267, p. 2].

² On June 12, 2012, the United States Patent and Trademark Office issued Patent No. US 8,199,197 B2 (the “Patent”) to Actioncam, LLC, for the aerial camera system described in the Patent Application. [Dkt. #341].

Based on the evidence presented by the parties and applicable law, the court makes the following Findings of Fact and Conclusion of Law.

I. Findings of Fact³

1. On July 15, 2004, Winnercom, Inc., purchased the Skycam® System (“Skycam System”) from CF Inflight, Ltd. [Dkt. #267, Pretrial Order at 7, Admitted Fact 2].
2. Prior to the purchase, Winnercom retained Insight Engineering, a division of McElroy Manufacturing, Inc. (“Insight Engineering”) to perform a third-party evaluation of the Skycam system. [Dkt. #326, ,TR, 46:20-25; 175:9-17]. Bennett, an employee of McElroy, worked on the evaluation and coauthored a report on the Skycam System. [*Id.*, TR, 46:20-25; 174:22-175:17; PX 5].
3. Michael Williams, Vice-President of Interactive for Winnercomm, Inc. (“Winnercomm”), participated in the due diligence for the purchase of the Skycam System. [Dkt. #326, TR, 45:25-46:3, 46:16-19]. Williams testified that after the acquisition, Winnercom believed it needed an experienced engineer in the field of manufacturing, design, prototyping and, in general, electronics and mechanical fields. [Dkt. #326, TR, 47:25-48:6]. While Skycam had employees with some technical knowledge, it had no engineers other than Williams himself. [*Id.*, TR, 48:24-49:9].
4. Roy Patton is the Vice President of Engineering and Facilities for Winnercomm. [Dkt. #326: 173:7-10]. He was previously Chief Engineer at Winnercom and General Manager of Skycam. [Dkt. #326, TR, 174:8-10; Dkt. #327, TR, 192:23-193:21]. Williams and Patton discussed “the needs of the Skycam engineering to solve some of the technical problems” they

³ Any conclusion of law more properly characterized as a finding of fact is incorporated herein.

were having and talked about hiring Bennett as Chief Engineer to do that exact task. [Dkt. #326, TR, 49:10-15].

5. Williams and Patton interviewed Bennett for the job of Chief Engineer of Skycam. [Dkt. #326, TR, 176:7-11]. Patton believed Bennett's background in the manufacturing and design of electronic systems qualified him for the job. [Dkt. #326, TR, 176:12-15]. Skycam ultimately hired Bennett to be Skycam's Chief Engineer in late August of 2004. [Dkt. #326, TR, 50:9-10; 176:22-25; 177:23-178:7; JX 48].

6. There was no written employment agreement or any other written document between Bennett and Skycam describing the job responsibilities of Chief Engineer or assigning inventive rights to Skycam. [Dkt. #327, TR, 211:14-212:6; 275:11-16]. During pre-employment discussions with Bennett, Patton and Williams discussed making enhancements or improvements to the Skycam System.

7. Bennett acknowledged that while he was Chief Engineer at Skycam, his development of new designs or products was on behalf of Skycam, and that 100 percent of his engineering effort was on behalf of Skycam. [Dkt. #327, TR, 248:1-8]. He agreed that his compensation as Skycam's Chief Engineer compensated him for any new designs or upgrades that he came up with while employed as Chief Engineer at Skycam. [Dkt. #327, TR, 248:9-14].

8. Bennett's job responsibilities as Chief Engineer at Skycam were to manage the shop, oversee the maintenance and the process of the shop, analyze and design repairs and innovate equipment to improve the quality of the equipment. [Dkt. #326, TR, 177:3-8]. Initially, the design improvements were related only to the 4-point system, but after ESPN approached Skycam to develop a 2-point system, Patton made Bennett responsible for designing the LX system at Skycam. [Dkt. #326, TR, 177:9-22; JX 48, 8/29/04 email from R. Patton to Skycam

staff; JX 80, 10/13/05 email from Bennett to Patton; Dkt. #327, TR, 260:17-261:14]. Patton testified that Bennett was hired to invent and do research and development work that could lead to invention, and performed those responsibilities while employed at Skycam. [Dkt. #326, TR, 181:21-25]. Bennett agrees he was in charge of adding new functions and features to the Skycam system, as well as developing new products. [Dkt. #327, TR, 247:19-25].

9. When Skycam first hired Bennett, he was specifically tasked with solving a number of particular technical problems with the 4-point system, including vertical stabilization, camera stabilization, power problems and communication issues between the camera head and all the other systems. [Dkt. #326, TR, 51:10-22; 181:4-6; Dkt. #327, TR, 263:3-6].

10. After Bennett was hired, ESPN approached Skycam to develop a 2-point system called the “LX system.” Patton specifically assigned the task of designing that system to Bennett. [Dkt. #326, TR, 177:12-22; Dkt. #327, TR, 261:10-14].

11. Patton testified that Bennett did, in fact, design improvements to the 4-point system and designed and developed the 2-point LX system. [Dkt. #326, TR, 178:15-22]. In an October 13, 2005 email to Patton, Bennett stated he had been hired “to take on the responsibility for the technical aspects of Skycam and to ensure that all the current systems were ready for the field, to look at improvements to be incorporated into the new systems, develop the 2-point system, and to run the shop operations in Philadelphia.” [JX 80]. Bennett stated:

I hope you recognize the amount of new design, engineering, and production that was accomplished over the last six months, and that this would not have been done without me not only guiding the technical efforts and ensuring that all aspects of these operations were completed as efficiently as possible. In addition, I tried to ensure that I supported you and Skycam by taking on this responsibility myself so that you could concentrate on the general management issues.

[*Id.*]. In the email, Bennett characterized his work as “developing solutions to our problems,” and he stated, “I have also directed the development of several improvements to the new

systems, including a much cleaner, more professional spar mechanical structure, better electronics (new AV-PCB), much better pan stabilization (when tuned right!), and the effort to design, analyze, produce, and install new shafts in all the systems in a very short time frame.” [Id.].

12. Bennett’s employment with Skycam terminated on January 5, 2006. [Dkt. #267, Pretrial Order, Admitted Fact #4].

The Patent Application

13. On February 20, 2009, the Patent Application was filed. [See PX 22]. Bennett was named as an inventor. [Id.]⁴ The Patent Application lists Actioncam as the assignee. [Id.; see also, Dkt. #327, TR, 249:4-12].

14. The Patent Application is for “an aerial camera system having a plurality of main reels for feeding and reeling a plurality of main cables, a camera interface/safety reel for feeding a reeling a safety reel cable, a stabilized camera head being supported from and flown by the main cables, and a main computer system for controlling the feeding and reeling of the main cables and the safety reel cable.” [PX 22, Summary of the Invention, ¶15, at PX0022.020]. The Patent Application contains a total of twenty (20) claims. [PX 22, at PX0022.027-028]. Claim 1 is the broadest claim of invention, and is an independent claim. The remaining claims, Claims 2 through 20, are more limited in scope and are dependent on independent Claim 1.

15. Skycam contends Claims 1, 6, 7, 8, 10, 12, 17, and 18 describe devices Bennett designed and/or invented while he was employed at Skycam. Those claims describe:

1. An aerial camera system, comprising:

a plurality of main reels for feeding and reeling a plurality of main cables;

⁴ Other inventors listed were Garrett Cook, Matthew R. Jones, Kaveh Ashenayi, Michael F. Henry and Alexander MacDonald. [PX 22].

a camera interface/safety reel for feeding and reeling a safety reel cable;
a stabilized camera head being supported from and flown by said main cables;
a main computer system for controlling said feeding and reeling of said main cables and said safety reel cable, wherein each of said main reels, said camera interface/safety reel and said camera head are in communication with said main computer system; and

wherein said safety reel cable provides power, data and video communication between said camera head and said main computer system, and wherein said safety reel cable is capable of supporting the weight of and reeling in said camera head in an emergency mode.

- 6.** The aerial camera system of claim **1** wherein a camera mounted to said camera head includes three axis control with 45 degree angled roll axis before tilt access.
- 7.** The aerial camera system of claim **1** wherein a camera mounted to said camera head includes three axis control with orthogonal roll axis after tilt.
- 8.** The aerial camera system of claim **1** wherein a camera mounted to said camera head provides for camera rotation about a lens nodal point in pan, tilt and roll axes, and wherein rotation about said lens nodal point eliminates parallax error.
- 10.** The aerial camera system of claim **1** wherein said camera interface/safety reel includes angled sheaves to eliminate cable twist.
- 12.** The aerial camera system of claim **1** further comprising a level wind assembly to keep said safety reel cable wound on a drum of the said camera interface/safety reel in a controlled and consistent manner.
- 17.** The aerial camera system of claim **16** wherein said camera head further comprises two spinning mass gyroscopes mounted on said camera head such that the X-axis and the Y-axis each have one of said spinning mass gyroscopes, and wherein said camera head further comprises a solid state gyroscope for providing X-axis, Y-axis and Z-axis rotational angle information.
- 18.** The aerial camera system of claim **17** wherein said camera head further comprises:
an upper camera assembly having a weight plate, a gyro plate having said spinning mass gyroscopes mounted thereon, an electronics plate of said solid state gyroscope, a series of motor controllers and data converters mounted thereon, and a main platform having a pan motor and an array of power supplies mounted thereon; and

a lower camera assembly having a pan support tube, a tilt support tube and a camera bracket assembly, wherein said pan support tube is rotatably coupled to said pan motor, wherein said pan support tube is pivotally coupled to said tilt support tube, and wherein tilt support tube is rotatably coupled to said camera bracket assembly.

[PX22 at PX0022.027-.028].

Vertical Stabilization of Camera Head (Claims 1, 6, 7, 8, 17 and 18)

16. Bennett testified he was the inventor of Claims 6, 7 and 8 and a co-inventor, along with Alex McDonald, of Claims 1, 17 and 18. [Dkt. #327, TR, 249:19-23; 252:2-6; 254:16-255:2].

17. Bennett was specifically tasked with addressing the problem of vertical stabilization issues with the Skycam camera head. [Dkt. #326, TR, 51:15-17; 52:19-53:3; 61:23-62:2; 90:2-91:1]. Part of that assignment included the expectation that Bennett would create designs to alleviate or fix the vertical stabilization problems. [Dkt. #326, TR, 52:25-53:3; 181:10-12; JX 90, Bennett Email to Patton, January 3, 2006].

18. In order to solve the problem of stabilization of the camera head, Bennett began working on a stabilized head with roll axis. [Dkt. #326, TR, 63:14-64:3; PX 330; Dkt. #326, TR, 64:4-24; JX 83].⁵ In a December 12, 2005, email to, *inter alia*, Mark Streapy, Roy Patton and Mike Williams, Bennett stated he was working on a roll test setup to test development of PID loop⁶ control “using a simple 14bit processor (Microchip) with our crossbow gyro⁷ as the feedback.” [JX 83]. Bennett stated:

⁵ Williams described the “roll axis” as follows: “[T]he roll axis is if you take the bottom of the camera center point from the back of the camera to the lens, it rolls around that centerline of the camera.” [Dkt. #326, 63:14-20].

⁶ The PID loop is “part of the stabilization and how you do stabilization.” [Dkt. #326, 65:14-15].

I have been working on simple PID algorithms on and off for the last few months and I wanted to see if I could build a stabilized camera head using this approach. Since seeing the stabilized heads at NAB and seeing that adding the roll axis helps a lot, I thought I would test my PID algorithms in the roll axis. I don't think that this would be a reasonable upgrade to our current camera, but it is something that might help us develop a simplified stabilized camera head (using just one three axis gyro). My current setup actually reads the gyro and controls the motor with just a few components (no PMD board and only the motor amplifier for the drive electronics). This would greatly simplify the design, power requirements and increase the overall reliability. Using newer microcontrollers or SBCs we could also implement an Ethernet interface, which would offer much better performance and reliability.

[*Id.*]. The methods of three-axis head stabilization used in commercially available three-axis heads are discussed by Streapy in a February 4, 2005, email to Bennett and Patton. [PX 330; Dkt. #326, TR: 63:21-64:3]. Streapy had been looking at commercially available three-axis heads, including one by Filmotechnic, an idea Bennett raised. [PX 330; TR, 63:21-64:3].

19. In Bennett's work on the new camera head design, he created a video simulation (the "Animation") of a three-axis camera head with three axes of control (roll, pan and tilt). [PX 29, Animation; JX 88, 1/3/06 Email from Bennett; Dkt. #327, TR, 246:13-247:3; Dkt. #326, TR, 67:15-68:14]. He also designed and built a roll axis test device model, which he described in correspondence with the Skycam team, and he circulated a video of the device in operation. [PX 55, Video clip of device attached to JX 85 (the "Video"); JX 85, 1/2/06 Email from Bennett to Williams *et al.*, attaching videos and pictures, including JX 85.005; Dkt. # 326, TR, 67:15-68:10]. The Video illustrates the roll stabilization for use in a stabilized camera head, showing that the camera head rolls around the roll axis and has a feedback device for the motion. [Dkt. #326, TR, 75:6-14].

20. Williams testified, and this court finds, that the third sentence describing Claim 1 of the Patent Application ("a stabilized camera head being supported from and flown by said main

⁷ The crossbow gyro is "the solid state, three-axis gyro for feedback." [Dkt. #326, 65:15-17].

cables") describes the stabilized camera head Bennett was tasked to design at Skycam. [PX 22 at PX0022.027; Dkt. #326, TR, 61:23:62:3].

21. Dependent Claims 6, 7 and 8 [PX 22 at PX22.028] describe different kinds of axis control and different types of camera heads with three axis (i.e. pan, tilt, and roll) control. [Dkt. #326, TR, 62:22-25]. Dependent Claims 6, 7 and 8 are dependent claims of Claim 1, which means that they incorporate all of the limitations of the claim from which they depend and add further limitations specific to the dependent claim.

22. Dependent Claim 6 describes a camera mounted to the camera head including three axis control, with 45-degree angled roll axis before tilt axis. [PX 22 at PX22.028; Dkt. # 326, TR, 69:9-13].

23. Dependent Claim 7 describes three axis control with orthogonal roll after tilt axis.⁸ Williams testified that the difference between roll axis after tilt (Claim 7) and roll axis before tilt (Claim 6) is that roll axis prior to the tilt can cause some confusion in pan and roll for the system because the system cannot differentiate the similar movements; this is why there must be the 45-degree limit for effective roll correction. [Dkt. #326, TR, 71:14-22]. In contrast, in an orthogonal system, there is no need to limit the camera head to 45 degrees to maintain the three axes. [Dkt. #326, TR, 71:22-24].

24. Dependent Claim 8 describes pan, tilt and roll and focuses on the lens nodal point⁹ to eliminate parallax error. [Dkt. #326, TR, 72:10-15]. This is reflected in the Animation [PX 29]

⁸ Williams testified, "What orthogonal means in mathematics is that the axes are kept at right angles, so everything is perpendicular to each other. So what's happening in this case is the roll, tilt and pan axes are all kept in the plane so that no matter what position this gets into, it will still be able to do the three axes, independent of each other." [Dkt. #326, 70:13-18].

⁹ According to Williams, the "lens nodal point" is the single point where all light coming into the lens converges. [Dkt. #326, 72:16-19].

as the camera can slide back and forth in all three axes to line up into the lens nodal point. [Dkt. #326, TR, 72:20-73:16].

25. Claims 6, 7 and 8 were designs that Bennett created while employed at Skycam to address the specific problem of vertical stabilization in the Skycam camera head. [Dkt. #326, TR, 68:11-17; 69:8-70:10; 71:8-24; 72:5-75:21; JX 88; PX 29; JX 85]. Skycam considered the idea of designing a camera head with a roll axis to add stability to be instrumental moving forward, and Skycam did “a large number of investigation[s]” to continue to pursue the design. [Dkt. #326, TR, 75:22-76:1]. After Bennett was terminated, Skycam continued to investigate the roll axis potential, both with tilt, after roll and roll after tilt, depending on both configurations to try to come up with better stabilization of the camera. [Dkt. #326, TR, 76:2-11].

26. Claim 17 is a dependent claim of Claim 16. It applies two spinning mass gyros such that the X and Y axis each have one of the gyros in order to further stabilize the camera in all axes. [Dkt. #326, TR, 87:22-88:3]. Bennett co-designed the design described in Claim 17 with other members of the Skycam team, primarily Mark Streapy, to address the vertical stabilization issues of the Skycam system. [Dkt. #326, TR, 88:4-16]. Skycam used the concept on the LX system for stabilization of the camera, and considered the design to be important to the operation of its aerial camera system. [Dkt. #326, TR, 91:2-13].

27. Bennett testified the only spinning mass gyroscope he added to any camera head while at Skycam was one spinning mass gyroscope for the Z axis on the LX system. [Dkt. #327, TR, 254:2-6]. However Bennett’s computer had photographs of an LX system taken while he worked at Skycam. [PX 38.127 and 1.4A]. Bennett admitted the LX system had two spinning mass gyroscopes mounted on the camera head. [PX 38.127 and 1.4A; Dkt. #327, TR, 333:13-336:1].

28. Claim 18 is a dependent claim of Claim 17. [PX 22 at PX0022.028; Dkt. #326, TR, 88:17-19]. Claim 18 further describes how the two spinning mass gyros are to be mounted. [PX 22 at PX0022.028; Dkt. #326, TR, 88:20-89:2]. Claim 18 also describes a design Bennett, along with Streapy, created to fix the vertical stabilization issues at Skycam. [Dkt. #326, 89:3-6; *see also* JX 85, 1/2/06 email with spinning roll axis setup from the Video; JX 71, 8/5/05 email from Bennett discussing his research on ways to increase stabilization of the Skycam camera, especially vertical stabilization, and disclosing Bennett's long term solution, which involved moving the PID control to the computer on the system instead of a circuit board.] While at Skycam, Bennett was assigned to work on this solution to enhance vertical stabilization. [Dkt. #326, 90:15-21]. Bennett had the authority to delegate the task to someone else, but chose to work on the solution himself. [Dkt. #326, 90:22-25].

Fifth Safety Reel and Line Management (Claims 1, 10 and 12)

A. Tension Management (Fifth Safety Line and Reel)

29. Claim 1 of the Patent Application describes an aerial camera system, including a list of five subparts comprising the system. [PX 22 at PX0022.027]. The second subpart of Claim 1 describes "a camera interface/safety reel for feeding and reeling a safety reel cable." [Id.]. The fifth subpart describes safety reel cable "wherein said safety reel cable is capable of supporting the weight of and reeling in said camera head in an emergency mode." [Id.; *see also*, ¶47 at PX0022.022; Dkt. #326, TR, 54:8-55:4].

30. Bennett was tasked at Skycam with designing and developing the LX System, which Skycam contends included features and solutions to problems related to the Fifth Safety Reel and Line Management designs claimed in the Patent Application. [Dkt. #326, TR, 56:9-57:5].

31. The LX system required a design allowing for the management of cables in a two-reel system, specifically, keeping a constant low tension on the trailing cable. [Dkt. #326, TR, 56:9-18]. Skycam knew that the system would involve a large amount of cable being reeled off the trailing reel, and the system had to keep the cable from interfering with the rest of the camera operating system. [Dkt. #326, TR, 56:19-24]. The Skycam team was tasked with managing the trailing cable by putting it in a tension mode. [Dkt. #326, TR, 57:13-21].

32. Bennett created a number of designs for the management of tension on the LX System. [Dkt. #326, TR, 57:23:58-2]. The initial design of the LX system involved two reels that were controlled separately. [Dkt. #326, TR, 58:3-6]. The leading motor would pull the skate in a mode that would pull, but the trailing reel that was managing the cable behind it would be a motorized reel in “torque mode.” [Dkt. #326, TR, 58:6-15]. The solution kept a constant, relatively low tension on the reel cable so that it did not interfere with the movement of the camera head on the LX system. [Dkt. #326, TR, 59:19-23]. The solution also had the ability to pull the trailing cable back up tight. [Dkt. #326, TR, 60:8:19].

33. Bennett came up with the design described above, but accurately characterizes it as a “test mode.” [Dkt. #327, TR, 255:16-256:5]. The design was not pursued because it would only have allowed the system to be pulled in one direction and there would have been no way to pull the camera back the other direction. [*Id.*]. Bennett concedes the design would allow the system to maintain tension on the line and keep the camera on the unidirectional two-point system from falling. [Dkt. #327, TR, 256:12-19]. He agrees that the same design could be used to maintain a relatively low tension on a

line coming up from a camera head as opposed to trailing behind it, like it was on the two-point system. [Dkt. #327, TR, 256:20-257:13].

34. Skycam did not plan or develop a third safety reel for the LX system. In a 2-point system, the dolly rides across two Amsteel cables and is pulled by fiber support cables that also serve as safety cables. [Dkt. #326, TR, 127:12-128:14]. Thus, a separate safety reel is not necessary for the LX system.

35. Skycam did not have a fifth motorized safety reel with a communication cable on its 4-point system to pull the camera up and away in case of a failure, nor did Skycam ever assign Bennett to invent such a safety reel. [Dkt. #327, TR, 279:20-25].

36. Bennett's work on managing tension on a unidirectional 2-point LX system by placing a motorized wheel in "torque mode" was not sufficiently developed at the time he left Skycam to qualify as an "invention." Moreover, the work could not fairly be characterized as work on a "safety reel cable [for a 4-point system] capable of supporting the weight of and reeling in said camera head in an emergency mode."

B. Angled Sheaves

37. Claim 10 describes a "camera interface/safety reel" as including "angled sheaves to eliminate cable twist." [PX 22 at PX22.028]. Figure 7 depicts the sheaves and the Detailed Description of the Invention also describes the block and tackle effect of the angled sheaves and the fixed sheaves. [PX 22 at PX0022.028; Fig. 7, PX022.008, ¶53 at PX0022.023].

38. Williams testified that, with respect to the LX system, Skycam was also aware of, and worked on, the problem of twisting of cable related to the angle of the sheaves. [JX 90, ¶3(k); Dkt. #326, TR, 81:11-82:2]. He stated that managing the entry and exit point of the sheaves and pulleys is a vital function of cable management, because lining up the cable through

the entry point and exit point straight off the sheaves reduces damage to the cable. [Dkt. #326, TR, 77:1-10]. Williams testified that Bennett, while at Skycam, came up with a design with angled sheaves in order to eliminate cable twist. [Dkt. 326, TR, 83:2-6].

39. Williams testified the description in Paragraph 53 and Figure 7 of the Patent Application was the solution to a problem Bennett was specifically tasked with as part of the LX system development, and one Bennett designed while employed by Skycam. [Dkt. #326, TR, 77:11-79:20; 80:3-82:14; 83:2-6; *see also* JX 90, 1/3/06 email from Bennett regarding current engineering issues/project list and priorities, listing, *inter alia*, “bend-over-sheave tester/cable exerciser”].

40. Williams testified that Skycam considered Bennett’s designs related to the angled sheaves to be important to the operation of its aerial camera system, and was something Skycam was interested in pursuing. [Dkt. #326, TR, 82:15-22; 83:2-9].

41. Bennett’s testimony, however, contradicts Williams’ statements. In his January 3, 2006, memo listing work projects, Bennett listed “Fiber cable spooler and bend-over sheave tester/cable exerciser.” [JX 90, ¶3(k)]. However, he denies that while he was a Skycam, he designed an angled sheave for the LX system. [Dkt. #327, TR, 250: 8-14]. Although the LX system had shivs, he testified they were the same shivs already in use on the 4-point system. [Dkt. #327, TR, 250:8-25]. Bennett stated, and this court finds, that the sheaves on the drum of the LX system are straight and they angle on their own because they are attached with a strap that doesn’t force it into one orientation or another. [Dkt. #327, TR 277:4-22]. Bennett testified this was a standard practice in the 4-point system. [Dkt. #327, TR, 277:22-25]. Bennett testified that in contrast, the sheave that was created at Actioncam was an angled sheave that is hard mounted. [Dkt. #327, TR, 278:5-15].

42. Mike Henry, a consulting engineer for Actioncam, was the inventor of the device described in Claim 10. [Dkt. #327, TR, 250:3-7; 278:22-279:4].

C. Level Wind

43. Claim 12 describes the safety reel level wind. [PX 22 at PX0022.028]. Bennett testified he was a co-inventor of the device described in Claim 12. [Dkt. #327, TR, 251:5-12].

44. Williams testified that with respect to the LX system, Skycam was aware of the problem of how to wind the cable on the reel in a controlled and consistent manner, in order to maintain cable integrity and longevity. [Dkt. #326, TR, 85:9-86:8]. Williams testified that Bennett designed and Skycam implemented a geared level-wind assembly for the LX system. [Dkt. #326, TR:84:21-86:8]. Williams also testified Paragraph 54 of the Patent Application describes the design Bennett created while Chief Engineer at Skycam in connection with his responsibilities for the creation of the LX system. [PX 22 at PX0022.023, ¶54; Dkt. #326, TR:85:14-86:8]. Bennett had the authority to assign the task to someone else, but chose to work on it himself. [Dkt. #326, TR, 86:9-13].

45. Williams testified that Skycam considered Bennett's design for the level wind assembly to be important to the operation of its aerial camera system, and was interested in pursuing it. [Dkt. #326, TR 86:14-20].

46. Bennett denies that he designed a geared level wind assembly for the LX system. He testified the reels from the older version of the Skycam system (the “96 reels”) were geared, while the reels for the 4-point system actually used a separate motor to drive the level wind and that was electronically geared. [Dkt. #327, TR, 280:1-7]. He testified, and this court finds, that he simply modified the gear ratio in the old 96 reels so that the larger cable being used in the LX

system would wrap consistently. [Dkt. #327, TR 251:13-23]. He stated that dependent Claim 12 describes a standard geared level wind. [Dkt. #327, TR, 280:8-10].

II. Conclusions of Law¹⁰

1. In general, “an individual owns the patent rights to the subject matter of which he is an inventor, even though he conceived it or reduced it to practice in the course of his employment.”

Banks v. Unisys Corp., 228 F.3d 1357, 1359 (Fed.Cir. 2000).

2. Courts recognize two exceptions to this rule: first, where the employee is a party to an express contract giving the employer the patent rights and second, “where an employee is hired to invent something or solve a particular problem, the property of the invention related to this effort may belong to the employer.” *Id.* “Both exceptions are firmly grounded in the principles of contract law that allow parties to freely structure their transactions and obtain the benefit of any bargains reached.” *Id.*

3. The Supreme Court has explained the rationale for the employed to invent exception as follows:

One employed to make an invention, who succeeds, during his term of service, in accomplishing that task, is bound to assign to his employer any patent obtained. The reason is that he has only produced that which he was employed to invent. His invention is the precise subject of the contract of employment. A term of the agreement necessarily is that what he is paid to produce belongs to his paymaster.

United States v. Dubilier Condenser Corp., 289 U.S. 178, 187 (1933). *See also Solomons v. United States*, 137 U.S. 342, 346 (1890) (“If one is employed to devise or perfect an instrument, or a means for accomplishing a prescribed result, he cannot, after successfully accomplishing the work for which he was employed, plead title thereto as against his employer.”); *Teets v. Chromalloy Gas Turbine Corp.*, 83 F.3d 403, 407 (Fed. Cir. 1996) (“When the purpose for

¹⁰ Any finding of fact more properly characterized as a conclusion of law is incorporated herein.

employment thus focuses on invention, the employee has received full compensation for his or her inventive work.”); *Houghton v. United States*, 23 F.2d 386, 389 (4th Cir. 1928) (“[I]f the patentee be employed to invent or devise such improvements his patents obtained therefor belong to his employer, since in making such improvements he is merely doing what he was hired to do.”); *Daniel Orifice Fitting Co. v. Whalen*, 198 Cal.App.2d 791, 797 (1962) (“Where a person is employed to design improvements to the product of his employer, or to design new products for his employer, and he does so, he may not use the results of such work for his own use and benefit, and particularly not to the detriment of his employer”).

4. “When applying the ‘employed to invent’ exception, a court must examine the employment relationship at the time of the inventive work to determine if the parties entered an implied-in-fact contract to assign patent rights.” *Banks*, 228 F.3d at 1359.

5. “As a matter of common law after the Supreme Court’s decision in *Erie Railroad v. Tompkins*, 304 U.S. 64, 58 S.Ct. 817, 82 L.Ed. 118 (1938), state contract principles provide the rules for identifying and enforcing implied-in-fact contracts.” *Teets*, 83 F.3d at 408; *Banks*, 228 F.3d at 1359. Oklahoma law recognizes implied contracts. 15 O.S. § 131. An implied contract, under Oklahoma law, “is one, the existence and terms of which are manifested by conduct.” 15 O.S. § 133. Under Oklahoma law, a party seeking to establish breach of a contract—whether express or implied—must establish the elements of the claim by the greater weight of the evidence. *See Oklahoma Uniform Jury Instructions 23.1, 23.2.*¹¹ Courts applying Oklahoma law have commented:

¹¹ Defendants assert that since Oklahoma courts have not addressed the specific issue of the burden of proof necessary for an “employed to invent” claim, it is appropriate to predict how the Oklahoma Supreme Court would view the issue in light of opinions from other jurisdictions which had addressed this issue. [Dkt. #330 at 40]. They cite cases from other jurisdictions which follow pre-*Erie* Supreme Court decisions involving ownership of inventive rights. Under

The constituent elements of an express and an implied contract are the same—neither can be found unless a contract status is shown. The only difference is one of proof. The expressed contract must be shown by precise words, while the implied contract may be presumed from the acts of the parties, or from circumstances which “according to the ordinary course of dealing, and the common understanding of men, show a natural intent to contract.”

Woodruff v. New State Ice Co., 197 F.2d 36, 38 (10th Cir. 1952) (citing *Bd. of Cty. Com’rs of Seminole County v. Southwest Natural Gas Co.*, 138 P.2d 525, 527 (Okla. 1943)).

6. The primary factor courts consider in determining whether an employee to invent agreement exists is the specificity of the task assigned to the employee. *Standard Parts Co. v. Peck*, 264 U.S. 52, 59-60 (1924) (employer who hired and paid employee to develop a process and machinery for production of the front spring used in a car was entitled to ownership of the patent on the product). *See also Teets*, 83 F.3d at 409 (stating that “[t]he test for an implied-in-fact contract, however, does not focus on whether the enterprise in the past engaged in inventive activities but whether the employee received an assignment on this occasion to invent.”).¹² “Even if hired for a general purpose, an employee with the specific task of developing a device or process may cede ownership of the invention from that task to the employer.” *Id.* at 408.

that approach, that the burden of proof for establishing an employee to invent relationship is “clear and convincing” evidence. *See Dalzell v. Dueber Watch-Case Mfg. Co.*, 149 U.S. 315, 325-26 (1893); *University Patents, Inc. v. Kligman*, 762 F.Supp. 1212, 1220, n. 9 (E.D. Pa. 1991); *Clerke v. Beck*, 80 A.2d 252, 257 (N.J. 1951). However, the burden applicable to a claim for breach of implied contract in Oklahoma is “the greater weight of the evidence.”

¹² Other factors that carry *some* weight in the court’s inquiry include whether the invention was conceived during the period of employment, who originally posed the problem solved by the invention; the *employee’s* authority within the company to determine to whom to give a problem for solution and the relative importance of the idea to the employer’s business. Chisum on Patents, § 22.03[2]. The evidence presented in this case establishes that Skycam identified technical and performance issues with the 4-point system and tasked Bennett with solving them; that Skycam tasked Bennett with developing a 2-point system; that Bennett had the authority to assign the work to other employees, but chose to perform the work himself; that he conceived certain of the designs at issue while he was a Skycam employee; and that Skycam considered his solutions to be important.

“When an employee is hired to devote his efforts to a particular problem, to conduct experiments for a specifically assigned purpose, and an invention results from the performance of that work, it belongs to the employer.” *Shook v. United States*, 238 F.2d 952, 954 (6th Cir. 1956).

7. Defendants’ evidence and argument focus on the absence of an express agreement between the Skycam and Bennett, and clearly, no express agreement existed. However, as the court in *Teets* pointed out, “the absence of an express agreement characterizes all cases involving an implied-in-fact contract relationships” and “[t]he absence of an express agreement does not foreclose the inquiry into the parties’ intention to assign inventive rights.” 83 F.3d at 409.

8. Bennett was hired, *inter alia*, to analyze and design repairs, fix problems and innovate equipment to improve the quality and performance of the equipment. Initially those efforts focused on the 4-point system, but later he was also given the responsibility to design the 2-point LX system. [See Finding of Fact #8]. He was specifically tasked with creating designs to alleviate or fix problems with vertical stabilization of the camera head and with designing and developing the LX System, including solutions to problems related to the fifth safety reel and line management designs. Bennett acknowledged that while he was Chief Engineer at Skycam, his development of new designs was on behalf of Skycam, and his salary compensated him for any new designs or upgrades he developed while at Skycam. The court concludes Skycam has shown by the greater weight of the evidence that an employed to invent relationship existed between Skycam and Bennett.

9. While at Skycam, Bennett in fact designed solutions to *certain* of the design problems presented to him.

10. At the time Bennett developed these designs and/or solutions, Skycam considered them to be important, was interested in pursuing them and actually continued to pursue certain of them.

11. A patent application must include a specification and drawings. 35 U.S.C. § 111. The specification must contain a written description of the invention and one or more claims “pointing out and distinctly claiming the subject matter which the applicant regards as his invention.” 35 U.S.C. § 112. A claim may be written in independent form, dependent form or multiple dependent form. *Id.*

12. The claims of the patent application specifically identify what the applicant regards as the invention and define the patent owner’s exclusive rights. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1312-13 (Fed. Cir. 2005) (“It is a ‘bedrock principle’ of patent law that the claims of a patent define the invention to which the patentee is entitled the right to exclude”) (internal citations and quotations omitted).

13. Bennett was not employed to invent the entirety of the aerial camera system described in Claim 1. Specifically, Bennett was not employed to invent an aerial camera system comprising “a camera interface/safety reel for feeding and reeling a safety reel cable . . . wherein said safety reel cable provides power, data and video communication between said camera head and said main computer system, and wherein said safety reel cable is capable of supporting the weight of and reeling in said camera head in an emergency mode.” Insofar as the specific language set forth above is included in Claim 1, and insofar as Bennett was not employed to invent such features at Skycam, this court cannot conclude that Bennett was employed to invent the invention described in Claim 1. The court therefore concurs with the argument raised by defendants’ counsel in her Rule 52 motion raised at the close of Skycam’s evidence at the

nonjury trial on Skycam’s Ninth Claim for Relief – that Claim 1 describes an invention that includes all five of its subparts. [Dkt. #327, TR, 344:3-5].

14. Because Bennett was not employed to invent the entirety of the aerial camera system described in independent Claim 1, the court concludes Skycam is not entitled to ownership of the invention described therein.

15. Additionally, although Bennett’s solution for vertical stabilization of the camera head may meet the definition of an “invention” under the Patent Act, his solutions for the fifth safety line and reel, the angled sheave system and the level wind system were not “inventions” he developed at Skycam.

16. The Patent Act broadly defines an “invention” as an “invention or discovery.” 35 U.S.C. § 100(a). The Oklahoma Supreme Court, citing Black’s Law Dictionary, noted the word “invention” has been defined as follows:

INVENTION. *In patent law*, the act or operation of finding out something new; the process of contriving and producing something not previously known or existing, by the exercise of independent investigation ad experiment. Also the article or contrivance or composition so invented.

Amoco Production Co. v. Lindley, 609 P.2d 733, 740 (Okla. 1980). Insofar as the definition is based on patent law, the Oklahoma Supreme Court stated that an “invention,” to be so classified for purposes of determining ownership under a contract, must be patentable whether it is patented or not. *Id.* The three conditions for patentability are (1) statutory subject matter; (2) novelty and (3) nonobviousness. *Id.* The requirements are cumulative. *Id.*

17. Case law applicable to patent interference claims is instructive on the legal meaning of the word “invention.” In interference cases, courts have long held that an “invention” comprises two main inventive acts: “conception” and “reduction to practice.” *See Dunn v. Ragin*, 50 USPQ 472, 474 (Bd. Pat. Inter. 1941). “Conception” has been defined as “the

complete performance of the mental part of the inventive act” and “the formation in the mind of the inventor of a definite and permanent idea of the complete and operative invention as it is thereafter to be applied in practice.” *Townsend v. Smith*, 36 F.2d 292, 295 (CCPA 1930). “Reduction to practice” may be actual reduction or a constructive reduction to practice which occurs when a patent application on the claimed invention is filed. The filing of a patent application serves as conception and constructive reduction to practice of the subject matter described in the application. Thus, the inventor need not provide evidence of either conception or actual reduction to practice when relying on the content of the patent application. *See Hyatt v. Boone*, 146 F.3d 1348, 1352 (Fed. Cir. 1998). For an actual reduction to practice, the invention must have been sufficiently tested to demonstrate that it will work for its intended purpose, but it need not be in a commercially satisfactory stage of development. *See, e.g., Scott v. Finney*, 34 F.3d 1058, 1062 (Fed. Cir. 1994) (citing numerous cases wherein the character of the testing necessary to support an actual reduction to practice varied with the complexity of the invention and the problem it solved); *see also Fitzgerald v. Arbib*, 268 F.2d 763, 765 (CCPA 1959) (“the reduction to practice of a three-dimensional design invention requires the production of an article embodying that design” rather than a mere drawing). In *Scott*, the court observed that cases dealing with the sufficiency of testing to show reduction to practice share a common theme: “In each case, the court examined the record to discern whether the testing in fact demonstrated a solution to the problem intended to be solved by the invention.” 34 F.3d at 1063.

18. Skycam asserts that Claims 1, 6, 7, 8, 17 and 18 describe solutions to the problem of vertical stabilization issues with the Skycam camera head in the 4-point system; and Claims 1, 10 and 12 describe features and solutions to the Fifth Safety Reel and Line Management issues with respect to the LX System.

19. Defendants contend that, to the extent the systems and devices described in the claims of the Patent Application relate to *any* designs Bennett worked on for Skycam's 4-point or LX systems, his ideas and designs were not sufficiently developed at the time he left Skycam to qualify as "inventions."

Vertical Stabilization of Camera Head (Claims 1, 6, 7, 8, 17 and 18)

20. The third subpart of Claim 1 describes an aerial camera system that includes a "stabilized camera head." Claims 6, 7, 8, 17 and 18—all of which are dependent claims of Claim 1—further describe the characteristics and features of the camera and camera head.

21. While Bennett was employed at Skycam, he was tasked with finding—and did find—a solution to the problem of vertical stabilization issues with the Skycam camera head in the 4-point system. The devices described in Claims 6, 7, 8, 17 and 18 comprise the solution Bennett developed for the Skycam camera head vertical stabilization issues.

22. Bennett not only articulated his solution in memos to Skycam managers and team members, but he also prepared an animation demonstrating how his proposed design would work. Additionally, he constructed a roll simulator model and videotaped the newly designed platform in action to demonstrate its operation. The court concludes the solution's "conception and reduction to practice" occurred by the time Bennett left Skycam because he had formulated "a definite and permanent idea of the complete and operative invention as it is thereafter to be applied in practice." *Townsend*, 36 F.2d at 295.

23. Although Bennett was "employed to invent" the stabilized camera head described in the third subpart of independent Claim 1 and in dependent Claims 6, 7, 17 and 18, the court concludes Skycam is not entitled to ownership of the Patent for the reasons set forth in Conclusions of Law 11 and 12, above.

Fifth Safety Reel

24. With respect to the LX system, Bennett was tasked with finding a solution for management of tension on the cable, and he created an initial design for the use of two reels that were controlled separately. However, the design was no more than a unidirectional “test mode” while Bennett was at Skycam, and never progressed beyond that stage. In addition, Skycam did not task Bennett to invent a fifth safety reel for feeding and reeling a safety reel cable on a 4-point system.

25. Skycam has not carried its burden of establishing the fifth safety reel is an “invention” Bennett developed while employed by Skycam.

Angled Sheave System

26. Williams testified that Bennett developed an angled sheave system while at Skycam. However, Bennett testified that he used the same sheave design for the LX system as the design used on the 4-point system, and that the sheaves on the drum of the LX system are straight, but angle on their own because they are attached with a strap that doesn’t force it into one orientation or another. Moreover, while Bennett’s January 3, 2006, memo [JX 90] listed “fiber cable spooler and bend-over sheave tester/cable exerciser” as an R&D project, Skycam has presented no evidence Bennett ever developed a “bend over sheave” while at Skycam. Therefore, the court concludes Skycam has not carried its burden of establishing the device described in Claim 10 is an invention Bennett created while employed by Skycam.

Level Wind System

27. Williams testified Bennett—while at Skycam—developed the safety reel level wind described in Claim 12 of the Patent Application. However, there is no mention of the device in any of Bennett’s memos regarding projects, and Bennett testified that he simply used the reels

from the old Skycam system on the LX system, and modified the gears on them so that the larger cable being used on the LX system would wrap consistently. The court concludes Skycam has not carried its burden of establishing the safety reel level wind described in Claim 12 is an invention Bennett developed while employed by Skycam.

III. Conclusion

For the foregoing reasons, the court finds in favor of defendants Patrick J. Bennett and Actioncam, LLC, and against plaintiff Skycam, LLC, on Skycam's Ninth Claim for Relief in the Third Amended Complaint for an ownership interest in Patent Application US 2009/0207250 A1 and the resulting Patent, Patent No. US 8,199,197 B2.

ENTERED this 30th day of September, 2012.



GREGORY K. FRIZZELL, CHIEF JUDGE
UNITED STATES DISTRICT COURT